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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/243,689	02/03/1999	RICHARD M. WASSERMAN	101473	2795

25944 7590 01/13/2004

OLIFF & BERRIDGE, PLC
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EXAMINER

GARCIA OTERO, EDUARDO

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 01/13/2004

24

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/243,689

Applicant(s)

WASSERMAN, RICHARD M.

Examiner

Eduardo Garcia-Otero

Art Unit

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 23 December 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See attachment.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☐ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

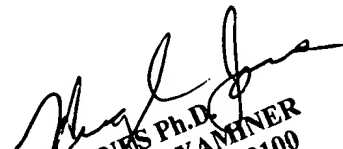
Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: _____.

Claim(s) withdrawn from consideration: _____.

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
10. ☒ Other: See Attachment.


HUGH JONES Ph.D.
PRIMARY PATENT EXAMINER
TECHNOLOGY CENTER 2100

ADVISORY ACTION

Introduction

1. Title is: HARDWARE SIMULATION SYSTEMS AND METHODS FOR VISION INSPECTION SYSTEMS
2. First named Inventor is: WASSERMAN.
3. Claims 45-72 of US Application 09/243,689 filed on 2/3/99, are presented for examination.
4. This Advisory Action is in response to Request for Reconsideration after Final Rejection filed 12/23/03. Claims 45-72 are pending.
5. The Examiner appreciates the Applicant's clear requests, and clear analysis supported by legal precedent and detail. Therefore, the Examiner will attempt to respond with similar clarity.

Issues

6. PREAMBLE. The language of preamble ("off-line programming system for a machine vision system") appears moot, because the limitations under discussion are included in the body of the claim 45. Note that if said language was not repeated in the body of claim, then the Examiner would not consider it in this claim, because it is "not necessary to give life" to this claim.
7. OFF-LINE PROGRAMMING SYSTEM. Applicant asserts that the prior art does not disclose an "off-line programming system for a machine vision system" in independent claim 45. The Examiner agrees that the prior art does not use this exact terminology. However, claim 45 clearly defines said "off-line programming system for a machine vision system" by stating "wherein the off-line programming system is operable to:..." and clearly lists three functions that the off-line programming performs, labeled by the Examiner:
 - [E1] "generate a current focus-dependent synthetic image..." and
 - [E2] "display the current focus-dependent image..." and
 - [E3] "generate at least one control instruction usable in an inspection program..."
8. Thus, the question is whether said three functions are disclosed in the prior art. The Examiner maintains that said three functions are disclosed in the prior art, see paragraphs 40-42 on page 8 of the prior office action. In the previous correspondence, both Applicant and Examiner have broadly discussed "off-line programming system", without always explicitly

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referring to the above three functions. In retrospect, the Examiner believes that said broad discussion was of limited use, except when focused on the specific functions.

9. PRIOR ART INTERPRETATION. Applicant asserts that the prior art should be interpreted narrowly. However, *In re Preda*, 401 F.2d 825, 159 USPQ 342, 344 (CCPA 1968) states “in considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.”
10. For example, Applicant (Request for Reconsideration page 4) asserts that Stevenson fails to teach or suggest the third function of the off-line programming system: “generate at least one control instruction usable in an inspection program”.
11. However, Stevenson page 30 states “These features enable designers to visualize all the key elements of their system’s optical performance”, and page 29 states “fine-tuned”. Thus, Stevenson’s term “fine-tuned” includes modeling the current state of key elements, and adjusting these key elements (fine-tuning). Further, note that Stevenson page 29 states “Quality-control optical vision systems can be conveniently simulated and analyzed... If the wrong camera is used or misplaced...”. Thus, the proper camera position is one “control instruction” (using Applicant’s terminology) which would be “generated” by Stevenson.
12. Further, one of ordinary skill in the art would be familiar with using the current state of the actual machine vision system as a benchmark for measuring potential improvements in performance, and also would be familiar with common simple simulation optimization search techniques such as altering a single parameter while holding the other parameters constant (a single variable search) to search for improvements in performance (for example, changing the camera position).

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13. MACHINE INSPECTION SYSTEM. Applicant asserts that Stevenson is directed at evaluating the optical performance of a car model, and is not directed at machine vision inspection systems. However, note that Stevenson states “Quality-control optical vision systems can be conveniently simulated and analyzed using software technology—for example, a system that evaluates circuit boards for microchip position and etching defects... If the wrong camera is used or misplaced...” at page 29, and “quality control optical vision system” at page 32.
14. Further, similar to the above discussion regarding “off-line programming”, the Examiner believes that it is efficient to discuss the term “machine vision inspection system” only in view of the specific limitations.
15. MULTIPLE SYSTEMS. Applicant asserts that Stevenson uses multiple programs with “interfaces” and “translators”, and that such systems are notorious for being “buggy”. Applicant further asserts that the claimed invention is “reliable”. However, the Examiner believes that Stevenson provides adequate disclosure using commercial software engines.
16. TRAINING FUNCTIONS. Applicant asserts that Stevenson does not disclose training. However, note that Stevenson page 29 states “Quality-control optical vision systems can be conveniently simulated and analyzed using software technology—for example, a system that evaluates circuit boards for microchip position and etching defects... If the wrong camera is used or misplaced...”. Thus, Stevenson trains regarding proper placement of the camera. Also see page 32 “To develop this type of quality-control optical vision system by trial and error would be a costly exercise if done by any method other than computer simulation”. Training of human operators is one well known use of simulation systems.
17. OTHER ISSUES. Other issues are similar to the above, and have been addressed in prior actions. Applicant’s assertions are not persuasive.
18. OTHER ART. For the purposes of historical background, the Examiner provides some additional robotics prior art from 1986.

Additional Cited Prior Art

19. The following US patents or publications are hereby cited as prior art, but have not been used for rejection. Applicant should review these carefully before responding to this office action. “Robotics” (Understanding Computers series) by Time-Life Books, 1986, ISBN 0-8094-

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5969-6, pages 41, 42, 54-55, and 116-117, discusses "computer-controlled paint booths" at page 41, and "inspecting the paint finish on cars with robots that are equipped with a laser and special optical scanners" at page 42, and "teaching a robot arm" at page 54-55, and "Directing the movements of a submersible ROV" at page 116 and 117.

Conclusion

20. All pending claims stand rejected against prior art.

Communication

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Garcia-Otero whose telephone number is 703-305-0857. The examiner can normally be reached on Tuesday through Friday from 9:00 AM to 8:00 PM. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kevin Teska, can be reached at (703) 305-9704. The fax phone number for this group is 703-872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (703) 305-3900.

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